

# United States Department of the Interior

OFFICE OF THE SECRETARY  
Washington, D.C. 20240



ER 02/1114

JAN 24 2003

Honorable Magalie R. Salas  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, D.C. 20426

**RE: COMMENTS ON NOTICE OF APPLICATION ACCEPTED FOR FILING AND SOLICITING MOTIONS TO INTERVENE AND PROTESTS AND SOLICITING COMMENTS AND FINAL RECOMMENDATIONS, TERMS AND CONDITIONS AND PRESCRIPTIONS FOR THE ROANOKE RAPIDS AND GASTON HYDROPOWER PROJECT (FERC #2009-018)**

Dear Secretary Salas:

The U.S. Department of the Interior (Department) has reviewed the Federal Energy Regulatory Commission's (FERC) November 25, 2002, notice regarding the above referenced project. The following comments, recommendations, and prescriptions for fishways are provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543), and the Federal Power Act, as amended (16 U.S.C. 791a-825r).

The U.S. Fish and Wildlife Service (Service) has been involved in the licensing process for this project since its inception. We have participated in numerous meetings and provided comments on documents throughout the process. In addition to our general statutory responsibilities, the Service manages the 17,976-acre Roanoke River National Wildlife Refuge which is located downstream and within the zone of impact of the Project. On April 26, 1999, the Service reviewed and provided comments and a list of information needs on the February 22, 1999, NOTICE OF APPLICATION TENDERED FOR FILING WITH THE COMMISSION AND SOLICITING ADDITIONAL STUDY REQUESTS. Since that time, select studies have been completed by Dominion Generation (Dominion or Licensee) to provide information in some subject areas but not all areas. Several of these studies, as detailed below, involve long-term monitoring of the Project's environmental effects. The Service does not believe that the FERC can make the requisite public interest determination to issue a license, or properly balance environmental and power interests without requiring that the licensee monitor the environmental effects of its operations.

The Roanoke River ecosystem downstream of the Roanoke Rapids and Gaston Hydropower Project is nationally significant and extremely complex. Major influences to ecosystem health and trends include current and historical land development activities (road and structural encroachment, forestry and agricultural practices, and others), and two modifications to the natural hydrological regime (Corps of Engineers flood management and FERC hydropower generation). There are also numerous natural and artificial causative agents (i.e., weather conditions, drought, upstream waste water effluent, agriculture runoff) that are of secondary importance to ecosystem health and trends but also influence the ecosystem. This complexity has hindered previous monitoring studies, and has led to ambiguous or controversial results and conclusions. Therefore, we strongly recommend that the monitoring identified herein be designed to quantify project impacts by resolving outstanding questions and addressing cause-and-effect relationships, confounding effects, the relative importance of the various inter-relationships and interactions (cofactors), and levels of significance of impacts.

The recommendations, terms and conditions, and prescription for fishways submitted in this document are based on the results of studies performed during the licensing process or on other applicable studies or documents. Most of these are contained within the Commission's formal docket for the project. We will be further reviewing the docket to insure its thoroughness and may supplement it if we find that documents we have relied on have not yet been included.

## **RECOMMENDATIONS PURSUANT TO SECTION 10(j) OF THE FEDERAL POWER ACT<sup>1</sup>**

### **I. Flow Recommendations**

#### **A. Management of the Roanoke River Bypass**

To restore and enhance the aquatic ecosystem of the bypassed reach of the Roanoke River, the Service recommends that an instantaneous, minimum base flow of 325 cubic feet per second (cfs) be maintained through release points on the north and south side of the dam from July 1 - February 28 (29 in a leap year). During this period, freshet flows of 500 cfs should be provided for 24 consecutive hours every 21 days to facilitate movement of aquatic organisms within the bypass reach. From March 1 - June 30, an instantaneous, minimum base flow of 1,500 cfs should be maintained through the release points to provide adequate flows for anadromous fish spawning activities.

#### **B. Target Flow Releases from the Roanoke Rapids Dam**

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<sup>1</sup> We have participated in development of, and conceptually agreed to, a draft technical settlement agreement. If the draft technical settlement agreement is finalized and signed by the Service, we expect to withdraw these recommendations and replace them with the appropriate terms of the agreement.

<u>Period</u>	<u>Min Flow (cfs)</u>
1/1 to 2/28	3,000 cfs or the U.S. Army Corps of Engineers weekly declaration from John H. Kerr Dam (weekly declaration), whichever is less
3/1 to 6/30	no peaking/constant release of the weekly declaration
7/1 to 9/15	2,000
9/16 to 11/15	1,500
11/16 to 11/30	2,000
12/1 to 12/31	2,500 or the weekly declaration, whichever is less

#### *Justification for I A & B*

The Service believes the flow recommendations should be included in any new license issued for the Roanoke Rapids and Gaston Hydropower Project to protect the Roanoke River's aquatic ecosystem. The flow targets are based upon the results of the instream flow analysis completed by Dominion as part of the relicensing studies visual observations by N.C. Wildlife Resources Commission staff (Dominion/North Carolina Power, 1998, 2000, 2001, 2001).

#### C. Flood Control Operation

To minimize the effect of the Licensee's operation of the project on downstream ecological communities following United States Army Corps of Engineers (USACE) prescribed flood control releases, the following measures should be incorporated into the license. When the USACE has been releasing a flow equal to or greater than 20,000 cfs, the project should step down to a flow of 9,000 cfs by releasing the following sequence of flows: a flow of 17,000 cfs for 8 hours; a flow of 14,000 cfs for 8 hours; a flow of 12,000 cfs for 4 hours; a flow of 11,000 cfs for 4 hours; a flow of 10,500 cfs for 4 hours; a flow of 10,000 cfs for 4 hours; and a flow of 9,500 cfs for 4 hours. During this reduction procedure, the Licensee will not engage in hydropower peaking.

#### *Justification*

Rapid reduction of flood control flows has led to low dissolved oxygen levels and fish kills in the Roanoke River, such as occurred in late July and early August of 1995 (Kornegay, 1995). Reducing the flow over a longer period of time should minimize the project's impact on the downstream aquatic ecosystem.

## **II. Hydropower Impacts**

#### A. Erosion Monitoring

The Service recommends the license include the following requirements. Within one year of license issuance, Dominion, in coordination with the Service and other appropriate parties, will develop a plan to monitor erosion (both scouring and mass wasting) along the Roanoke River downstream of the Project. If the studies show that the Licensee's peaking operations contribute to erosion the Licensee will, in consultation with the Service and other appropriate parties, develop and implement an approach to alleviate these impacts. A suitable monitoring plan

includes, at a minimum, the following elements: (1) a means of identifying or measuring conditions resulting from the project, (2) clearly explained and/or defined assumptions and working hypotheses describing targeted cause-and-effect relationships, and (3) specified time periods of study and results analysis. Monitoring may be needed after implementation of the new operations to ensure project impacts have been alleviated.

#### B. Within Channel Flora and Fauna

The Service recommends the license include the following requirements. Within one year of license issuance, Dominion, in coordination with the Service and other appropriate parties, will develop a plan to monitor steambank species and communities along the Roanoke River downstream of the Project. If the studies show that the Licensee's peaking operations adversely affect the species or communities the Licensee will, in consultation with the Service and other appropriate parties, develop and implement an approach to alleviate these impacts. A suitable monitoring plan includes, at a minimum, the following elements: (1) a means of identifying or measuring conditions resulting from the project, (2) clearly explained and/or defined assumptions and working hypotheses describing targeted cause-and-effect relationships, and (3) specified time periods of study and results analysis. Monitoring may be needed after implementation of the new operations to ensure project impacts have been alleviated.

#### *Justification for II A & B*

The project should be operated in a manner calculated to insure recruitment and survival of flora and fauna in numbers and locations adequate to sustain or restore the biological integrity of the Roanoke River's bank and instream ecosystems. Post licensing monitoring of erosion should be conducted by the licensee to insure that project operations are not contributing to bank erosion and subsequent loss of fish and wildlife habitat. The erosion monitoring study conducted by Dominion is incomplete. Data were not collected after many hydrologic events as was originally proposed by Dominion. A visual comparison of the Cape Fear River was conducted by Dominion and members of the various resource agencies. Although it was not a quantitative study, this comparison revealed that the banks along the Cape Fear, which is not subject to hydropower peaking, appeared to be less steep and to contain more vegetation. Bank erosion increases water turbidity which can lead to harm of aquatic organisms by smothering of eggs and clogging of gills. As erosion occurs and banks collapse, there is a loss of important bank habitat to fish and wildlife. Loss of vegetation by bank erosion and subsequent collapse also eliminates important habitat for a variety of wildlife.

#### C. Inundation of the Floodplain

The Service recommends the license include the following requirements. Within one year of license issuance, Dominion, in coordination with the Service and other appropriate parties, will develop a plan to monitor representative species and communities (including, but not limited to, tree species, animal species, herbaceous and woody bank vegetation) on the Roanoke Rapid floodplain downstream of project. If the studies show that the Licensee's peaking operations adversely affect the species or communities the Licensee will, in consultation with the Service

and other appropriate parties, develop and implement an approach to alleviate these impacts. A suitable monitoring plan includes, at a minimum, the following elements: (1) a means of identifying or measuring conditions resulting from the project, (2) clearly explained and/or defined assumptions and working hypotheses describing targeted cause-and-effect relationships, and (3) specified time periods of study and results analysis. Monitoring may be needed after implementation of the new operations to ensure project impacts have been alleviated.

#### *Justification*

Riparian ecosystems are adapted to withstand some level of flooding and provide important habitat for fish and wildlife. A study conducted by the U. S. Geological Survey (USGS) concluded that the general impact of flooding on Roanoke River National Wildlife Refuge seems to be negative (USGS, 2002) based on preliminary data.

Project operations should not contribute to growing season floods to the extent that they contribute to suppression of vegetation on the Roanoke River floodplain below Roanoke Rapids Dam and/or the reduction of recruitment and survival of flora and fauna in numbers and locations adequate to sustain these ecosystems. Although they were requested during the relicensing, no studies were conducted to evaluate or quantify the project impacts on the flora and fauna of the Roanoke River floodplain. Therefore post licensing monitoring is necessary to insure project operations are not adversely affecting the floodplain ecosystem.

### **III. Downstream Water Quality**

To document compliance with water quality standards, the licensee should fund three USGS continuous water quality monitoring stations for dissolved oxygen and temperature in the vicinity of Halifax, Oak City, and Jamesville, North Carolina. Data should be forwarded to the Service and other appropriate agencies every other month (bimonthly) from November 1 through May 31 and monthly June 1 through October 31. Data must be submitted electronically and include all available parameters collected by USGS (e.g. stage or flow) in addition to: Site, Date, Time, Depth, Dissolved Oxygen concentrations (mg/l) and Water temperature (C). Project operations should be modified, if needed, to prevent violating water quality standards and/or adversely impacting the aquatic ecosystem.

#### *Justification*

During the relicensing, it was shown that drainage of water routed onto the Roanoke River floodplain as a result of project operations can cause a decrease in water quality in the Roanoke River (Graham, 2001, Kornegay, 1995). The project should be operated in a manner to prevent violation of North Carolina water quality standards and/or adverse impacts to the aquatic ecosystem of the Roanoke River.

### **IV. Consumptive Non-project Use of Project Waters**

The license should be conditioned such that before the licensee requests to allow a consumptive non-project use of project waters, a thorough environmental review of the project must be completed. This review should address, but not be limited to addressing, the cumulative impacts of water withdrawals of the lower Roanoke River and the secondary impacts of the intended uses of the water. This information will provide much of the information the FERC will need to make a decision.

#### *Justification*

Consumptive non-project use of project waters can lead to the loss of water from the Roanoke River and impacts to the ecosystem due to the loss of flows. Water intake structures should be designed in a manner to protect aquatic organisms. Development associated with municipal or industrial withdrawals often lead to large changes in the landscape. This information will be needed by the FERC to complete the environmental review of the request and decision making process.

### **RESERVATION OF AUTHORITY TO PRESCRIBE FISHWAYS PURSUANT TO SECTION 18 OF THE FEDERAL POWER ACT**

In order to allow for the timely implementation of fishways, including effectiveness measures, the Department requests that the Commission include the following condition in any license it may issue for the Roanoke Rapids and Gaston Project:

Pursuant to section 18 of the Federal Power Act, the Secretary of the Interior herein exercises her authority under said Act by reserving that authority to prescribe fishways during the term of this license.

Resource agency management priorities currently emphasize the protection of existing native aquatic resources, and the restoration and recovery of aquatic and riparian habitat within the project area through the provision of adequate instream flows and the development and implementation of a comprehensive fisheries management plan for the Roanoke River Basin. Historically, diadromous species including alewife, American eel, American shad, Atlantic sturgeon, blueback herring, hickory shad, sea lamprey, shortnose sturgeon, and striped bass had full access to the Roanoke River. It is highly likely that, in the absence of a settlement of these issues by mutual agreement with the licensee, the Service will prescribe for American eel, American shad, blueback herring and alewife during the early years of any license issued for this project.

### **MANDATORY CONDITIONS REVIEW PROCESS**

On January 19, 2001, the Department of the Interior and the Department of Commerce finalized a process for public review and comment on conditions and prescriptions developed under both

section 18 (Fishway Prescriptions) and section 4(e) (Federal Reservations) of the Federal Power Act called the Mandatory Conditions Review Process (MCRP). The MCRP provides a standardized opportunity for interested parties to provide comment on the conditions and prescriptions developed by the Departments. The MCRP became effective on January 19, 2001, and is pertinent to this licensing proceeding.

Accordingly, pursuant to the MCRP, the Department hereby invites comments on its Section 18 fishway prescription. Interested parties must submit all comments and any new information relevant to the Department's prescription for fishways within 60 days immediately following the date of this letter. Comments and new information should be addressed to the Regional Director, U.S. Fish and Wildlife Service, 1875 Century Blvd., Suite 200, Atlanta, GA 30345. In addition to this office, a copy must be sent to each of the following addresses:

1. Director, Office of Environmental Policy and Compliance, U.S. Department of the Interior, 1849 C Street, Mail Stop 2340, Washington, DC 20240.
2. Office of the Regional Solicitor, U.S. Department of the Interior, 1 Gateway Center, Suite 612, Newton, MA 02458-2802.
3. U.S. Fish and Wildlife Service, Raleigh Field Office, P.O. Box 33726, Raleigh, North Carolina 27636.

The Department will respond to any comments received after the closure of the Commission's draft NEPA comment period. At that time, the Department will consider all comments and substantial evidence received during the MCRP comment period pertaining to the prescription of fishways. The Department may revise its prescription for fishways to reflect the outcome of any comments received and submit modified prescriptions for fishways no later than 60 days after the closure of the Commission's draft NEPA comment period.

## **SUMMARY COMMENTS**

The Department does not object to issuance of a new license for the Roanoke Rapids and Gaston Project provided our Section 10(j) recommendations to protect, mitigate, and enhance fish and wildlife resources and our Section 18 fish passage prescriptions are incorporated into the license. We look forward to working with the Commission, Dominion Generation and other parties involved in the alternative licensing process to produce a new license that conserves and develops existing fish and wildlife resources and other environmental values.

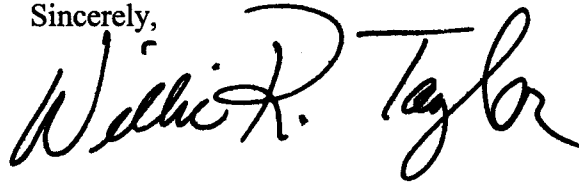
We appreciate the opportunity to review and provide comments on the application for the proposed new licensing of the Roanoke Rapids and Gaston hydroelectric project. Questions or requests for clarification regarding any of the fish and wildlife comments contained herein may be directed to Dr. Garland Pardue, Ecological Services Supervisor, U.S. Fish and Wildlife

Honorable Magalie R. Salas

8

Service, P.O. Box 33726, Raleigh, North Carolina 27636 or (919)856-4520, ext. 11.

Sincerely,

A handwritten signature in black ink, reading "Willie R. Taylor". The signature is fluid and cursive, with the first name "Willie" and last name "Taylor" clearly legible.

Willie R. Taylor, Director  
Office of Environmental  
Policy and Compliance

cc: Service List

References

Dominion (2000) Lower Roanoke River Instream Flow Analysis - Weighted Usable Area Data, December 2000. Roanoke Rapids and Gaston Hydropower Project. FERC No. 2009.

Dominion (2001) Supplemental Lower Roanoke River Instream Flow Analysis - Weighted Usable Area Data, January 2001. Roanoke Rapids and Gaston Hydropower Project. FERC No. 2009.

Dominion (2001) Lower Roanoke River Instream Flow Analysis Data Package, December 2001. Roanoke Rapids and Gaston Hydropower Project. FERC No. 2009.

Graham, B. and J. Cannon (2001) Effects of Load Following at Roanoke Rapids Power Station on Lower Roanoke River Mainstem and Floodplain Water Quality, September 2000. Roanoke Rapids and Gaston Hydropower Project. FERC No. 2009. Dominion.

Kornegay J.W. and T.W. Jones (1995) A Report On the Roanoke River Fish Kills, 25 July - 2 August 1995. North Carolina Wildlife Resources Commission, Raleigh. 19 pp.

North Carolina Power (1998) Draft Applicant Prepared Environmental Assessment, May 1998. Roanoke Rapids and Gaston Hydropower Project. FERC 2009.

United States Geological Survey (2002) Effects of Extended Managed Flooding on the Diversity and Abundance of Wildlife, Vegetation, and Macroinvertebrates of the Floodplain in the Roanoke River Wildlife Refuge. Patuxent Wildlife Research Center, Laurel, Maryland.

CERTIFICATE OF SERVICE

I hereby certify that I have caused this day the foregoing letter to be served upon each person designated on the official list compiled by the Secretary in the Roanoke Rapids and Gaston Hydropower proceedings, FERC No. 2009-018.

Dated at Washington DC this 24th. day of January 2003.

Terence N. Martin

Terence N. Martin  
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